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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,693	04/21/2004	Keith M. Kotchick	58294US006	5394
32692 7590 07/17/2007 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER DUONG, TAI V	
			ART UNIT	PAPER NUMBER
			2871	
			NOTIFICATION DATE	DELIVERY MODE
			07/17/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

**Application No.**

10/828,693

**Applicant(s)**

KOTCHICK ET AL.

**Examiner**

Tai Duong

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17-39, 42-47, 49-58 and 60-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15, 17-39, 42 and 65 is/are allowed.
- 6) ☒ Claim(s) 43-47, 49, 52, 55, 58, 60 and 64 is/are rejected.
- 7) ☒ Claim(s) 50, 51, 53, 54, 56, 57, 61-63 and 66 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

The obviousness-type double patenting rejection of claims 1-15, 17-39 and 42 is withdrawn in view of the amendment to claim 1 and Applicant's remarks (Remarks, page 12, Double Patenting Rejection, second paragraph).

Upon reconsideration, the obviousness-type double patenting rejection of claims 43-47, 49-58 and 60-66 is also withdrawn because claims 1-30 of U.S. Patent No. 7,088,405 do not disclose the structural feature "a structured substrate having a structured surface and a dielectric partial reflector disposed on the structured surface" and the functional feature "wherein ambient light incident on the display unit produces glare light in a glare direction and the structured translector reflects image light over a range of direction substantially surrounding the glare direction".

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recited feature "reflecting portions that are *perpendicular* to the display normal" of claim 1, and the recited feature "reflecting portions that are *perpendicular* to a normal to the display unit" of claim 50 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not disclose the feature "reflecting portions that are *perpendicular* to the display normal" or the feature "reflecting portions that are *perpendicular* to a normal to the display unit", as recited in claims 1 and 50.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 43, 45-47, 49, 52, 58, 60 and 64 are rejected under 35 U.S.C. 102(e) as being anticipated by Iijima (US 6,870,586) cited by Applicant.

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As to claim 43, note Figs. 3 and 5 which identically disclose the claimed transfective display device comprising a color (color filters 11) transmissive display unit (4, 8, 9, 11-15) having a viewing side 3 and a back side 8, a structured translector 6 disposed to the backside of the color display unit, the structured translector comprising a structured substrate (40, 43) having a structured surface and a dielectric partial reflector (41, 42) disposed on the structured surface. Iijima is silent about the *functional* feature "wherein ambient light incident on the display unit produces glare light in a glare direction and the structured translector reflects image light over a range of direction substantially surrounding the glare direction". However, it has been held that "[W]hile features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). See MPEP 2114, page 2100-56.

As to claims 47 and 52, note the planarization layer 8 and at least one light management film (21, 22) disposed between the light source 5 and the structured translector 6. For the remaining claims, see discussions of the recited features in col. 3, lines 34-55; col. 4, lines 15-38; col. 5, lines 27-34; col. 9, lines 61-67; col. 13, line 43 – col. 14, line 60; and col. 15, lines 8-44.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima (US 6,870,586).

Although Iijima is silent about the dielectric partial reflector having transmission in the range of 70%-90%, it would have been obvious to a person of ordinary skill in the art to employ in the Iijima's device the dielectric partial reflector having transmission in the range of 70%-90% for enhancing the brightness of the displayed image.

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima (US 6,870,586) in view of Jang et al (US 6,831,719) cited by Applicant.

Claim 55 additionally recites a diffuser disposed between the structured transreflector and the transmissive display unit. Jang et al disclose in Fig. 11 that it is known to employ a diffuser disposed between the structured transreflector and the transmissive display unit. Thus, it would have been obvious to a person of ordinary skill in the art in view of Jang et al to employ a diffuser disposed between the structured transreflector and the transmissive display unit in the Iijima's device for providing uniform backlighting.

Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima (US 6,870,586) in view of Yamamoto (US 4,488, 775) cited by Applicant.

The only difference between the transreflective display device of Iijima and that of the instant claim is the structured dielectric reflector including a plurality of dielectric layers whose optical thicknesses are not odd integer multiples of one quarter of a selected wavelength. Yamamoto discloses that it was known to form dielectric layers whose optical thicknesses are not odd integer multiples of one quarter of a selected

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wavelength (col. 4, lines 1-15). Thus, it would have been obvious to a person of ordinary skill in the art in view of Yamamoto to form in the device of Iijima a structured dielectric reflector including dielectric layers whose optical thicknesses are not odd integer multiples of one quarter of a selected wavelength for adjusting the transmission and reflection factors of the structured dielectric reflector.

Claim 1 is allowed over Iijima because none of the prior art discloses or suggests the structural feature "wherein the structured reflector defines reflecting portions that are *perpendicular* to a normal to the display unit". Also, see Applicant's remarks on page 16 of the Remarks, first and second paragraphs. Claims 2-15, 17-39, 42 and 65 are also allowed since they depend on claim 1.

Claims 50, 51, 53, 54, 56, 57, 61-63 and 66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 50 and 51 are allowed for the same reasons as those of claim 1. Claim 53 is allowed for the feature recited in claim 52 *in combination* with the feature "wherein the planarization layer includes diffusing particles".

Claim 54 is allowed for the feature recited in claim 52 *in combination* with the feature "wherein the planarization layer is an adhesive layer adhering the structured transreflector to the transmissive display unit".

Claim 56 is allowed for the feature recited in claim 43 *in combination* with the feature "wherein the structured reflector comprises a plurality of reflective units, each reflective unit comprising reflective portions set at positive and negative angles relative

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to an axis through the structured reflector, and the display unit defines picture elements, each picture element of the display unit being disposed over a set of more than one reflective unit".

Claim 57 is allowed for the feature recited in claim 43 *in combination* with the feature "wherein the substrate has a relatively low refractive index and the dielectric partial reflector comprises a single layer of relatively high refractive index material disposed on the structured surface of the substrate".

Claim 61 is allowed for the feature recited in claim 60 *in combination* with the feature "wherein the refractive index of the planarization layer is substantially the same as the refractive index of the substrate".

Claims 62 and 63 are is allowed for the feature recited in claim 43 *in combination* with the feature "wherein the substrate has a refractive index in the range from approximately 1.3 to approximately 1.8, and the dielectric partial reflector includes at least one layer having a refractive index in the range from approximately 1.8-2.3".

Claim 66 is allowed for the feature recited in claim 43 *in combination* with the feature "wherein the display unit comprises a liquid crystal display unit having liquid crystal layer disposed between first and second absorbing polarizers and a backlight unit to generate backlight, the structured transreflector being disposed between the color display unit and the backlight unit".

Applicant's arguments with respect to claims 43, 48, 55 and 59 have been considered but are moot in view of the new ground(s) of rejection.



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Any inquiry concerning this communication should be directed to Tai Duong at telephone number (571) 272-2291.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

  
TVD

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TOAN TON  
PRIMARY PATENT EXAMINER